Sven Bölte · Joachim Hallmayer (Editors)

Autism Spectrum Conditions

FAQs on Autism, Asperger Syndrome, and Atypical Autism Answered by International Experts

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What Are Evidence-Based Treatments?

Scott O. Lilienfeld & James D. Herbert

By evidence-based treatments, mental health professionals mean interventions that are supported by high-quality research data about what works. Many authors refer to a "3-legged stool" of evidence-based practice, which includes (a) research evidence, (b) clinical experience, and (c) patient preferences and values (APA Task Force on Evidence-Based Practice, 2006). Here, we emphasize the first leg, research evidence, given the vast and often bewildering array of interventions for ASC, only a minority of which is based on solid scientific evidence. The evidence-based practice movement, which originated several decades ago in the field of traditional medicine, is gathering momentum in psychology, psychiatry, social work, and other domains of mental health practice (Spring, 2007).

The scientific support for evidence-based treatments for ASC derives from 2 major types of research designs. The first is the *randomized controlled trial* (RCT). In RCTs, investigators randomly assign some individuals with ASC to receive an intervention, which could be either psychological (e.g., a behavioral intervention) or biological (e.g., a medication) in nature. These individuals constitute the "experimental group." Investigators then randomly assign other individuals with ASC to receive either no treatment or, ideally, a "placebo" treatment (in the case of medication studies, typically a sugar pill that contains no active ingredients), which controls for positive expectations of improvement. These individuals constitute the "control group." By randomly assigning individuals to experimental and control groups, researchers minimize the possibility that preexisting differences between these groups, such as differences in gender or the severity of their conditions, contribute to differences in treatment outcome. If the study was properly conducted, and if individuals in the experimental group improve significantly more than individuals in the control group, we can tentatively conclude that the intervention is effective. If several such studies conducted by independent research teams yield similar findings, we can typically regard the treatment as evidence-based. Although RCTs are generally considered the "gold standard" of research designs, they tend to be expensive and time-consuming to conduct. Perhaps largely as a result, relatively few RCTs have been conducted on ASC, especially for nonmedication treatments.

The second type of research design on which evidence-based treatments are based is the *single-subject study*, in which each individual with an ASC serves as "his or her own control." In single-subject studies, investigators systematically observe individuals' behavior when a treatment, such as a behavioral intervention, is absent, as well as when it is present. For example, researchers might administer a treatment for a specific period of time, then withdraw it, then re-administer it, and then withdraw it again, all the while carefully monitoring one or more "target" behaviors (e.g., physical aggression, eye contact with adults). If target behaviors consistently improve when the intervention is delivered, but not when it is removed, a compelling case can be made that the intervention is evidence-based. Although single-subject studies often allow reasonably strong inferences for the individuals tested, they do not permit strong generalizations to other individuals. As a result, it is crucial that such studies be replicated for multiple persons with ASC.

Many parents and teachers, understandably, wonder why RCTs and single-subject studies are needed to determine whether a treatment works. After all, can't we merely (a) administer a treatment, (b) wait a while, say a few weeks, and (c) look to see whether the individual has improved? Although intuitively appealing at first glance, this approach to ascertaining treatment effectiveness is problematic, because the individual may have improved for a host of reasons unrelated to the treatment itself. Putting it a bit differently, improvement *following* a treatment does not necessarily imply improvement *because of* a treatment. For example, individuals with an ASC might get better after a treatment because of (a) spontaneous improvement (i.e., getting better on their own), (b), placebo effects (i.e., improvement resulting merely from the expectation of improvement) or (c), regression to the mean, a phenomenon that refers to the tendency of extreme scores to become less extreme after retesting. Regression to the mean is a particular problem for many symptoms of ASC that often vacillate in severity over brief time periods. If we administer a treatment when a symptom, such as yelling in response to frustration, becomes especially problematic, we may find that this symptom improves shortly thereafter. However, this improvement may merely reflect regression to the mean and be unrelated to the treatment. Another set of problems with looking for changes over time concerns how symptoms are observed and measured. Parents, teachers, and even therapists can sometimes be biased in their observations, noticing apparent improvement in an area, because they expect to see it even when no real improvement occurred. High quality studies, whether RCTs or single-subject studies, use objective, systematic measures to avoid the biases inherent in informal observations.

Because other entries in this volume focus on specific evidence-based treatments for ASC, we do not offer an exhaustive list of such treatments here. Nevertheless, interventions based on applied behavior analysis (ABA) qualify as evidence-based treatments for ASC. Although ABA does not "cure" the core features of these conditions, RCTs and single-subject studies suggest that it yields significant improvements in multiple target domains, including social skills, language, and aggression.

It is equally important for parents, teachers, and clinicians to be aware of which treatments are *not* evidence-based. Non-evidence-based treatments for

ASC fall into two classes: (1) Treatments that have not yet been adequately tested and (2) treatments that *have* been adequately tested and shown not to work. Largely or entirely untested treatments may eventually be shown to be effective in well-controlled studies. However, parents, teachers, and mental health professionals should regard them with caution, because some of them could turn out to be ineffective or even harmful. Such treatments for ASC include art therapy, music therapy, Son-Rise, vision therapy, herbal remedies (e.g., Valerian, Gingko biloba), hyperbaric oxygen treatment, antifungal treatments, and CranioSacral therapy. In rare circumstances, a few of these interventions may be justified when multiple evidence-based treatments have been tried and failed. Nevertheless, when deciding whether to administer these interventions, mental health professionals must carefully weigh the potential costs against the potential benefits and must inform clients (if they are capable of providing informed consent) and their families that these treatments are experimental.

In contrast, some treatments for ASC have been tested repeatedly and found to be largely or entirely ineffective. Examples of these interventions are facilitated communication, auditory integration training, psychoanalytic play therapy, secretin, glutein-free diets, and heavy metal detoxification (chelation therapy) (Herbert, Sharp, & Gaudiano, 2002; Smith, 2008). Such interventions are, at best, a waste of time and resources, and, at worst, potentially harmful. Barring the appearance of new scientific evidence that contradicts previous conclusions, these interventions are not recommended for individuals with ASC.

References

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6